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ABSTRACT

The purpose of the developmental project described in this report was to provide intervention to learning disabled adults through individualized tutoring. During the project, the following activities were implemented: (1) information sessions on learning disabilities were conducted to raise awareness of the problem; (2) 20 adults, double the number anticipated, were referred to Parkland Regional College for identification of learning disabilities, with 19 identified as learning disabled; (3) an initial screening device was developed for identification of adults with learning disabilities; (4) the Structure of Intellect Learning Abilities Test was adopted for project use; (5) volunteer tutors were recruited and their training requirements were determined and met; (6) support services required by adults with learning disabilities were identified; and (7) instructional strategies and a tutor's guide to the Structure of Intellect test were developed and printed. It was recommended that the project continue for another year to complete the developmental work initiated during the first phase. (The project report contains six appendixes: newspaper and journal articles, a program brochure, the screening checklist, an assessment report, a resource list, and the tutor's guide to the Structure of Intellect test.) (KC)

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Literacy for the Learning Disabled Adult

Project Report

1989-90

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Submitted by:

Debbie Purton, Project Co-ordinator
Elisabeth Stewart, Project Consultant

For:

Parkland Regional College

To:

The Literacy Secretariat, Secretary of State

September 1990

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INTRODUCTION

The following report for the 1989-90 project, *Literacy for the Learning Disabled Adult*, is the result of developmental work undertaken by Parkland Regional College.

The project was both exploratory and developmental in nature; that is, it was not designed to test a particular hypothesis. Rather, its purpose was to provide appropriate literacy training to learning disabled adults through the utilization of individualized tutorial instruction. To achieve this goal, it was necessary to collect information on existing practices, and to further develop methods and materials relevant to the teaching of literacy skills to adults with learning disabilities.

The primary objectives of the project were to:

a) develop mechanisms to identify, assess and place learning disabled adults within a tutorial situation;

b) provide information and assistance on the development of individualized educational plans;

c) identify and provide for the training requirements of volunteer tutors;

d) compile a list of recommended resources;

e) determine the necessary support services required by learning disabled adults; and

f) prepare a package of prescriptive teaching techniques and methods suitable for adults with learning disabilities.

This report presents the findings of the project and lists a number of recommendations for further study and development. It is hoped that the information provided will be of use to learning disability and literacy organizations in future programming efforts.

The first section of the report outlines the various activities undertaken to meet project objectives. The next section provides a description and analysis of the intervention process. The final section summarizes the major developments and accomplishments of the project and presents recommendations for further consideration.

SECTION ONE

SPECIFIC PROJECT OBJECTIVES AND RELATED ACTIVITIES

OBJECTIVE #1: TO DEVELOP A NETWORK FOR STUDENT REFERRAL

In the development of an effective referral base, Parkland Regional College organized a series of activities and events which parallel guidelines set by the *Learning Disabilities Association of Canada* (LDAC). In a report released in April 1989, LDAC stated that the role of the intervening agent should include:

1. Information sessions on learning disabilities and illiteracy;
2. Promoting understanding of academic, emotional, occupational and social impact of learning disabilities and illiteracy;
3. Sensitization to emotional consequences of adults with learning disabilities and their psychological reactions to academic work and learning in general;
4. Sensitization to adults with learning disabilities enormous need for praise, encouragement, emotional support and optimistic outlook;
5. Realistic expectations of people with learning disabilities;
6. Desensitize adults with learning disabilities about learning (i.e., get over negative/failure/frightened feelings).

(LDAC, p. 8)

Operating within this theoretical framework, Parkland Regional College undertook the following activities to develop an increased awareness level and to establish a referral base:

- preparation of press releases for media within the region. (Newspaper and journal articles relating to the project are included in Appendix A);

- participation in a televised interview to discuss the project and develop an awareness base within the region;
- development of an informational brochure outlining project goals and activities (Appendix B);
- organization of an inter-agency meeting for the purposes of: a) developing an increased awareness of the needs and problems faced by adults with learning disabilities, and b) outlining specific project goals, activities and referral procedures; and
- presentation of a project overview to Adult Basic Education Instructors within the region.

Initially, it was estimated that ten participants would be involved in the pilot phase of the project. As a result of the above activities, however, twenty adult referrals were received for assessment of potential learning difficulties. Of these twenty referrals, nineteen individuals were assessed as learning disabled.

OBJECTIVE #2: TO DEVELOP MECHANISMS TO IDENTIFY, ASSESS AND PLACE LEARNING DISABLED ADULTS WITHIN A TUTORIAL SITUATION

It became immediately apparent that an initial screening device was required which would be appropriate for use by professionals, and paraprofessionals, not necessarily trained or experienced in the identification of educational problems. To meet this identified need, an initial screening checklist was developed for program use. (Appendix C)

The checklist is designed to focus observations on four general areas of functioning - namely, language, literacy, memory and organization, and social skills.

Once completed, the checklist was then reviewed by the Project Co-ordinator to determine if additional forms of assessment were required. Informal feedback from individuals using this screening device has been very positive, and all referrals received as a result of checklist use were most appropriate.

Following the initial screening, potential program participants were then assessed, either individually or in small groups, using the Structure of Intellect - Learning Abilities Test (SOI-LA), Form A.

For further discussion on the use of the SOI-LA assessment device, refer to Section Two of this report.

OBJECTIVE #3: TO UTILIZE A ONE-ON-ONE TUTORIAL SETTING TO PROVIDE INDIVIDUALIZED LITERACY TRAINING

In the *Study of Literacy and Learning Disabilities* report released in June 1989, the Learning Disabilities Association of Canada, lists the following basic principles to be considered in designing a literacy program for adults with learning disabilities:

1. One-to-one instruction must be considered a crucial component in the design and delivery of literacy program to adults with learning disabilities.
2. Learners require an atmosphere of extreme trust in order to build their levels of self-confidence and self-esteem. This is accomplished through various techniques that emphasize positive feedback and reassurance.
3. Tutors must be sensitive to the needs of adult learners and to the difficulties and challenges that may be involved in working with such a group.
4. Tutors must be prepared to develop a "long term" and "ongoing" relationship with learners, and to the extent possible high turnover of tutors must be avoided.

(LDAC, p. 39)

In establishing a suitable program design for adults with learning disabilities within the Parkland Regional College area, adherence to the above principles was maintained.

* * * * *

Using the volunteer resources available through Parkland Regional College, tutors were recruited to work individually with identified learning disabled adults under the supervision of professional personnel. Volunteers involved in the project were requested to make a *minimum* time commitment of two hours of tutoring per week. Flexibility in lesson times and location was encouraged to accommodate the needs of each learner.

The project operated on a continuous intake basis and, for this reason, follow-up data is not currently available for the majority of learners involved in the program. When this data is available (to be collected at the end of one year of intervention), it will be possible to judge with more scientific accuracy the value of the project and areas of potential strength and weakness.

OBJECTIVE #4: TO PROVIDE INFORMATION AND ASSISTANCE ON THE DEVELOPMENT OF INDIVIDUALIZED PROGRAM PLANS (IPPS)

One of the major points raised by both literacy and learning disability experts, as highlighted in the *Study of Literacy and Learning Disabilities* report, was that "literacy programs should be geared toward the achievement of 'successes', rather than the correction of faults."

(LDAC, p. 38)

To avoid the use of a "deficit skills" model, it was essential that learners' strengths receive as much attention as areas of weakness. The Structure of Intellect - Learning Abilities test (SOI-LA) provided much of this information. Using the SOI-LA specific learning strengths and weaknesses were identified. Areas of strength were then used to remediate areas of learning difficulty.

It was also very important that this "balanced picture" of the learning disabled adult be communicated to both the volunteer tutor and the student. The format for reporting assessment results shown in Appendix D was developed for this purpose.

Following the development of an assessment report by the Project Coordinator (in consultation with Project Consultant), a conference between the Coordinator, volunteer tutor and learner was organized. During this meeting, assessment results were explained and a general discussion of teaching strategies ensued. This consultative approach also allowed both the volunteer tutor and the learner an opportunity to offer suggestions or ask for further clarification. Once a general agreement had been established, the tutor/learner pair began the tutoring process to implement the individualized program plan.

OBJECTIVE #5: TO IDENTIFY AND PROVIDE FOR THE TRAINING REQUIREMENTS OF VOLUNTEER TUTORS

To identify and address the training requirements of volunteer tutors, a literature search was conducted in addition to ensuing discussions with other professionals in the field.

Several common training needs emerged. These have been summarized as follows:

1. Literacy tutors must have a clear understanding of learning disabilities, as well as receiving explanations of specific learning disabilities, i.e. dyslexia, dysgraphia, dyscalculia, etc.
2. Literacy tutors must be sensitized to the educational, social and psychological needs of adults with learning disabilities.
3. Literacy tutors must have an understanding of learning style differences, and should be encouraged to use a multi-sensory approach, when possible.
4. Literacy tutors must be trained to apply specific teaching/remediation techniques.

Following these general guidelines, three training sessions were organized for Parkland Regional College volunteers to meet initial training requirements. Workshops conducted were:

- Learning Disabilities: An Overview
- Teaching Strategies for Adults with Learning Disabilities
- Developing Writing Skills.

As the tutoring process continues during Phase II, additional types of training will be required by volunteers working with learning disabled adults. Possible topics for future training sessions might include:

- Assessment of Learning Styles
- Metacognitive Learning Strategies
- Developing Reading Comprehension Skills.

OBJECTIVE #6: TO PROVIDE A COLLECTION OF MATERIALS, APPROPRIATE FOR ADULTS WITH LEARNING DISABILITIES, FOR PROGRAM USE

OBJECTIVE #7: TO COMPILE A LIST OF RECOMMENDED RESOURCES

A collection of resources was purchased for program use based on information elicited from other professionals in the field and a review of related literature.

The list of resources outlined in Appendix E has been compiled as the result of preliminary feedback from program personnel, volunteer tutors and learning disabled adults who have utilized the collection. Resources listed have been categorized into the following areas: professional resource, tutor training and educational.

It should be noted, however, that to adequately assess the appropriateness of these resources it is essential that program participants be given an extended time frame to use and experiment with them. It is recommended that volunteer tutors and adult learners continue to utilize the resource collection during Phase II of the project. A final evaluative summary and resource recommendations will be prepared at that time.

OBJECTIVE #8: TO DETERMINE THE NECESSARY SUPPORT SERVICES REQUIRED BY ADULTS WITH LEARNING DISABILITIES, AND TO MAKE PROVISIONS FOR THESE SERVICES

Analysis of an informal needs assessment of learning disabled adults currently involved in the project indicates a complexity of needs which will require a broad range of support services.

These findings are further substantiated by recommendations outlined by the Learning Disabilities Association of Canada. In the *Literacy and Learning Disabilities* Project Report (April, 1989), LDAC stated that support services for adults with learning disabilities should include the following components:

1. Information sessions on learning disabilities and literacy to help clients label and understand their long-standing difficulties and failures;
2. Support groups for adults with learning disabilities to provide opportunities to vent feelings and share concerns;
3. Access to appropriate program accommodations; and
4. Individual therapy, if required.

These support services will be implemented during Phase II of the project. To evaluate the effectiveness of the intervention process and the support services provided, the Coopersmith Self-Esteem Inventory was administered to all participants upon program entry.

The Coopersmith provided a rapid, easily scored assessment of self-concept; in addition, this measure can be filled in by the learner individually or, if necessary, the statements can be read orally and scored in that manner without affecting the reliability or validity of the scores.

In terms of collecting post-program data, research indicates that the reliability for the Coopersmith at 6 - 12 month intervals is acceptable. The Coopersmith will be re-administered to all project participants after one year of intervention.

OBJECTIVE #9: TO ESTABLISH CRITERIA FOR REFERRING ADULTS WITH LEARNING DISABILITIES TO EXISTING ALTERNATE PROGRAMS AND TO ASSIST IN THIS TRANSITION

Due to the inherent difficulties associated with continuous intake procedures, the majority of learners involved in the project are not at a stage where program transition is a suitable option.

The establishment of program referral criteria will be addressed during Phase II as need warrants.

OBJECTIVE # 10: TO DEVELOP METHODS AND MATERIALS FOR STUDENT EVALUATION

OBJECTIVE # 11: TO DEVELOP A MEANS BY WHICH PROGRAM EFFECTIVENESS CAN BE MONITORED AND EVALUATED

Both qualitative and quantitative methods of evaluation will be employed for the purposes of student and program evaluation. Specific evaluation methodologies, which will be conducted at the end of Phase II, will include the following:

1. Interviews with learners and volunteer tutors involved in the project;
2. Questionnaires to be completed by all project participants; and
3. Statistical analysis of SOI-LA and Coopersmith SEI pre- and post-test scores.

OBJECTIVE # 12: TO PREPARE A PACKAGE OF PRESCRIPTIVE TEACHING TECHNIQUES AND METHODS SUITABLE FOR LEARNING DISABLED ADULTS

A Tutor's Handbook (working draft) has been prepared as a result of research conducted during Phase I of the project. The handbook, entitled *Instructional Strategies for Adults with Learning Disabilities*, presents a series of teaching strategies suitable for use with adults who are experiencing learning difficulties. Included within the handbook are instructional strategies within the areas of: reading comprehension, vocabulary development, spelling and written language.

The handbook is intended to serve as a training/reference manual for volunteer tutors who are working with learning disabled adults. It is NOT a "stand alone" resource but, rather, is to be used under the guidance and supervision of literacy or learning disability program staff.

Following the assessment of specific areas of learning difficulty, program staff would recommend the use of particular strategies which have been outlined in the handbook. Tutors would then receive training in the application of those strategies on an individualized basis.

The handbook should also serve as a useful resource for Adult Basic Education instructors working with adults with learning difficulties.

It is recommended that during Phase II of the project the following activities should occur:

a) train volunteers in the use of specific strategies;

b) proceed through an implementation phase where tutors working with learning disabled adults can utilize strategies outlined in the handbook; and

c) modify the handbook, as required, and develop additional materials where gaps have been identified.

SECTION TWO

DESCRIPTION AND ANALYSIS OF THE INTERVENTION PROCESS

I. REVIEW OF THE LITERATURE

During the process of developing the original guidelines for this unique program, reviews of the literature undertaken identified problems in the following areas:

- identification of adults with learning disabilities;
- program development and delivery;
- social and vocational problems experienced;
- problems with self-concept and self-confidence; and
- problems with daily living skills.

In terms of the scope of this report, a limited review of the literature was undertaken, focusing specifically on the areas identified above.

In a study which compared self-assessments of learning disabled and non-disabled college students, Houck et al (1989) had subjects respond to a number of Likert-type items constructed to assess student's perceptions of strengths and weaknesses. A factor analysis was conducted on the items, resulting in 11 separate clusters:

- career planning, confidence, and support;
- organization, study skills, and time management;
- adaptability;
- reading and written expression;
- handicapped rights and accommodations;
- receptive language;

- visual processing and short-term memory;
- oral expression;
- long-term memory;
- problem solving/math skills; and
- self-awareness.

The results of the study indicated that learning disabled college students perceived themselves as having significant difficulty in only 2 of the 11 factors: *reading and written expression; visual processing and short-term memory*.

In a study published in 1988, Judith Smith conducted a review of the literature on the social and vocational problems of learning disabled adults. Strongly advocating that professionals take a life-span approach to learning disabilities, Smith identified the need to focus educational interventions on the demands of adulthood and adaptation to adult roles. In her discussion of those research studies related to assessment, she identifies as a major problem the tendency to assess adults with learning disabilities using instruments designed for children. In the section of her paper devoted to addressing services for learning disabled adults, Smith reports that her review of the literature reveals a very limited number of services for this population. Among the services identified as crucial for these learners were:

- educational programs for those learning disabled adults who failed to complete formal educational programs;

- access to vocational rehabilitation services to address the common problems of unemployment and underemployment experienced by this group;
- provision of social skills training and, where necessary, mental health services for those dealing with extreme frustration, depression, etc.

Minskoff et al (1988) compared learning disabled adults and high school students using a survey type approach. Subjects from both groups were invited to participate; in addition, teachers of the learning disabled, plus other adult service providers, completed a survey relative to the study. The results of this study indicated that the adults surveyed more often reported difficulties in almost all of the areas presented. The high school students confined identified areas of difficulty to problems with reading, spelling and arithmetic. However, the teachers' responses indicated much closer agreement with responses given by the adult learning disabled population. Explanations for these results centred around possible unrealistic self-perceptions and lack of personal understanding on the part of the learning disabled high school students. Minskoff points out that "In a relatively short time after completing high school, LD adults become more accurate in their self-perceptions and the reality of their situation. This sudden jolt into reality may result in LD adults feeling more frustrated and depressed." (p. 122)

In a recent study, Daryl F. Mellard presented, described and discussed the process developed by the California Community College System to identify students with learning disabilities (1990). This process marries

the collection of both formal and informal assessment data, and also acknowledges the importance of clinical perceptions collected by the learning disabilities specialist. Mellard cautions against wholesale adoption of the specific model by other agencies and/or organizations, pointing out that the identification/assessment process needs to be specific to the context of the system involved in the process.

This preceding brief sample of the recent literature relative to the learning disabled adult supports the original review completed before the program at Parkland Regional College was initiated. In terms of providing services to learning disabled adults, this program qualified as one which accepted as a mandate the provision of educational services to a population which was not successful in either completing formal educational programs or developing adequate daily living skills. Because learning disabled adults often present themselves initially to a professional who likely lacks specific experience with this primarily educational phenomena, it was essential that the program develop ways to heighten awareness of learning disabilities among the adult population, and develop some type of initial screening device which would be appropriate for use by professionals not necessarily trained or experienced in the identification of educational problems. Following entrance to the program, the learning disabled adult was paired with a volunteer tutor. This unique aspect of the program necessitated the development of specific training programs for these volunteers, specific intervention packages based on the individual assessment results, and the provision of a professionally trained support system for both learner and tutor.

II. RATIONALE/DESCRIPTION OF SOI ASSESSMENT & TRAINING

THE SOI ASSESSMENT

The Structure of Intellect Learning Abilities Test (SOI-LA) refers to a series of assessment measures designed to assess a wide variety of cognitive abilities or factors of intelligence in both children and adults. The tests are based on J.P. Guilford's *Structure of Intellect* model of intelligence. This model described 90 different intellectual abilities. The basic *SOI-LA Test* measures 26 of these 90 abilities. The 26 were chosen because they, more than the other, are related to success in school and vocational training. They are, as shown by research, the basic *learning abilities*; and, as such, they underlie the basic *learning skills* which form the backbone of education. Each ability within the Structure of Intellect model is represented on three general dimensions of human intelligence - hence, each ability is represented by three letters (called a *trigram*), e.g. *CFU*. Each ability can therefore be defined in terms of its *operation* (*C*ognition), its *content* (*F*igural), and its *product* (*U*nits).

In addition to general cognitive assessment, the SOI Tests have been used widely for the following purposes:

- diagnosis of learning disabilities;
- detailed profiling of strengths and weaknesses of the educationally handicapped;

- determining the presence of developmental vision problems that may interfere with learning;
- analysis of strengths and weaknesses in the skill elements underlying achievement in math and reading;
- prescription of specific teaching methods, cognitive training materials, and curriculum materials for remediation or enhancement;
- evaluation of the effectiveness of special school programs and educational treatments, including those materials and methods related to the SOI-LA.

(Meeker, Meeker & Roid, 1985)

The essential difference between the SOI-LA assessment and the more traditional intelligence testing providing a global I.Q. score is the focus on describing not only *how much* but also *what kind* of intelligence is present. In addition, the SOI assessment provides specific information on five *OPERATIONS* (cognition, memory, evaluation, convergent production, divergent production), three types of *CONTENT* (figural, symbolic, semantic), and six *PRODUCTS* (units, classes, relations, systems, transformations, implications).

By combining specific subtests on the basic SOI-LA, it is also possible to obtain an insight into development in the following academic skill areas: *Reading* (foundational and enabling skills), *Arithmetic*, and *Mathematics* skills. Specific abilities assessed by the SOI assessment have been found to be prerequisite to the acquisition of these academic skills; individual scores obtained enable the diagnostician to determine

strengths and weaknesses, and to develop a program which focuses on using the learners' strengths to compensate for, or assist in the training of, specific weaknesses.

A number of the SOI subtests are good indicators of certain vision difficulties which may well be impacting negatively on the acquisition of basic academic skills. Although the subtests are not optometric tests, consideration of the ten which are cognitive representations of vision functions can assist in the prediction of visual difficulties. They assist in the prediction of a learner who may be at risk in either prolonged learning tasks, or on the job due to visual stress, strain and/or dysfunction.

Further manipulation of the subtests and consideration of the clusters can be used to identify specific types of learning problems. Difficulty in dealing with the 'systems' subtests is often a preliminary indicator of the specific learning disability known as 'dyslexia' and, when encountered, warrants further investigation using the SOI Dysintegral Checklist in order to determine more specifically the nature of the problem. Difficulty in dealing with the semantically based subtests suggests a disability which is language based. Problems with the memory subtests identifies another realm of disability. For each of these, the SOI provides specific, detailed information which may be used to develop an Individualized Education Plan based on SOI materials and the most appropriate approach to academic intervention.

SOI TRAINING & MATERIALS

A basic tenet of the Structure of Intellect approach is that intellectual functions can be trained successfully, and that this training will impact positively on the acquisition of academic skills. Training materials are available in either modular or group format; computer programs are also available in some of the areas assessed by the SOI-LA Test.

Following either a computer or hand analysis of the data collected via the SOI-LA assessment, it is possible to develop an individual intervention program designed to enhance strengths, train weaknesses, and remediate specific gaps in the learner's abilities profile. Training may be implemented focused specifically on the *operations, content, or products level*. Although it is not essential to follow any particular order in the training of specific skills, a certain hierarchy does present itself such that the training of intellectual operations would begin with *Memory* and move from there to *Cognition* through *coNvergent Production* (Problem Solving), etc. When dealing with the products, the natural order would present itself as beginning with *Units*, then *Classes*. *Systems and Relations* lend themselves to being presented and trained together.

In addition to specific training modules and suggestions available through SOI Systems, suggestions for complementary activities are presented. Reading approaches are suggested on the basis of preferred *learning style* - whether Figural, Symbolic, or seMantic. To increase the volunteer's understanding of the SOI model and its accompanying

teaching approaches, a *Tutor's Guide to the Structure of Intellect* was developed for program use. This guide book explains learning style differences and offers appropriate questioning strategies to be used in remediating areas of learning difficulty. References to specific SOI exercises and activities have also been included. (Appendix F)

* * * * *

Depending on the degree of dysfunction present, the time frame for specific SOI training varies; however, because the intervention is highly cognitive and process oriented, changes in functioning and mastery of academic skills should be noticeable within anywhere from 1 - 3 months, depending on the amount of time and commitment on the part of the learner and the tutor.

III. DESCRIPTIVE STATISTICS RELATIVE TO PROJECT: YEAR ONE

LEARNER PROFILES

Following the implementation of the program and the initial assessments, certain patterns began to emerge when the profiles of the learners were compared. First, the degree of disability being encountered was significant; these adult learners were highly vulnerable, and had not experienced much degree of success in their academic histories. Second, the types of disabilities encountered fell into four general categories: *language based problems; systems disabilities; vision difficulties/dysfunctions; memory disabilities*. Each of these will be discussed and described in more detail.

1. Language Based Difficulties

These learners have difficulty working successfully with words and ideas. Their skills may be more non-conceptual and auditory in nature. Specific potential areas of weakness include:

- vocabulary (CMU - Cognition of seMantic Units);
- verbal relations skills (CMR - Cognition of seMantic Relations);
- ability or fluency with words and ideas (DMU - Divergent production of seMantic Units); and
- speed of word recognition (NST - coNvergent production of Symbolic Transformations).

If all these areas are low, then the learner will have problems with reading and communication skills.

2. Low Systems and/or Memory

Inability to deal with systems of information is the profile most often associated with dyslexia and its related difficulties. This learner will have difficulty processing information, either visually or auditorally or both. If the memory is also weak, the learner will have difficulty 'holding' information in mind long enough to process it efficiently. There may also be difficulties in focusing and concentrating on prolonged academic tasks.

3. Vision Difficulties/Dysfunction

If there are difficulties with learning due to physiological problems with vision, these difficulties must be addressed either previous to or concurrently with any specific intellectual training. The importance of adequate vision related to learning tasks and reading should not be underestimated; both visual acuity and the development of eye coordination and tracking skills are essential foundational reading skills. The learner who has difficulty with the SOI subtests related to visual skills will experience difficulty with prolonged visual tasks. They may experience eye stress/strain (redness, soreness, rubbing). Watching their performance on paper and pencil tasks may identify problems with tracking, coordination, and focusing. Behavioral clues may include transposition or reversal of letters and/or words, losing place on page or tracking inaccurately when distracted from task, holding text either very close to or far from the eyes, and complaining of blurring, double vision and/or headaches.

DEMOGRAPHICS AND DESCRIPTIVE STATISTICS

Over the time frame of year one, twenty adults were screened and assessed through this program (N=20). In terms of gender and ethnicity, the breakdown was as follows:

	MALE	FEMALE	
NATIVE	1	3	(16%)
NON-NATIVE	11	5	(84%)
	(63%)	(37%)	

The ages of the participants represented a *range* from 19 years to 56 years, with a *median* age of 29 years. The *mean* was 33 years, with a *standard deviation* of 11.

In terms of educational level, the *range* was from no formal education to grade twelve, with a *median* of grade 8.

The following table represents the breakdown as to types of disabilities and deficiencies identified through the assessment process:

LANGUAGE BASED	SYSTEMS BASED	VISION	MEMORY
17	13	11	13
(90%)	(68%)	(58%)	(68%)

Given this information, it is obvious that many of the subjects possessed multiple deficiencies in the learning abilities assessed through the SOI-LA Test. The following table presents this information:

ALL CATEGORIES	THREE CATEGORIES	TWO CATEGORIES	ONE CATEGORY	NOT L.D.
7	5	4	3	1
(35%)	(25%)	(20%)	(15%)	(5%)

In terms of *learning style information*, the breakdown is presented in the following table:

LEARNER STYLE	NUMBER	PERCENTAGE
Figural	4	20%
Symbolic	4	20%
seMantic	1	5%
All Disabled	6	30%
All Below Average	4	20%
All Average/Above	1	5%

At this time, 15 of the subjects assessed are involved in ongoing training and teaching through the program. Of the five (5) who are not involved, one did not qualify as Learning Disabled given the categories identified by the SOI-LA. Of the remaining four (4), one participant moved from the area, one obtained a job which precluded involvement, one is currently incarcerated, and one was not ready to make a commitment to the program at this time.

IV. DISCUSSION

The use of the SOI-LA test enabled the collection of data specific to the range of learning abilities present in each participant in the program. In addition to information relative to overall level of functioning, this assessment measure provided explicit information on 26 discrete learning abilities. Combining the appropriate subtests on the SOI-LA allows for consideration of the skills which are prerequisite to the successful acquisition of the basic academic skills.

In addition to the assessment information available, the SOI-LA approach to training, enhancing, and remediating specific abilities allows the development of very specific intervention procedures based on the pattern of strengths and weaknesses discovered through the assessment process. Following the assessment, this program was developed and discussed in cooperation with the volunteer tutor, the coordinator of the program (Basic SOI Trainer), and the consultant to the program (Advanced SOI Trainer). Following implementation of the program, the coordinator was available on a regular basis, as was access to the program consultant.

Four major areas of difficulty/disability were identified in the course of this program:

- language based;
- systems based;

- vision difficulties/dysfunctions; and
- memory deficiencies.

Of these four categories, 90% of the population experienced difficulty dealing with seMantic information. Previous research using the SOI-LA has indicated that systems based deficiencies are often associated with the specific learning disability known as dyslexia. These learners have difficulty dealing with sequencing, systems of information, and relationships of ideas to ideas. 68% of the population assessed displayed this difficuity.

Of the twenty subjects assessed, seven (35%) scored within the Below Average - Disabling Range on all four categories identified. In addition, six (30%) of the learners fell within the Disabling Range whether dealing with Figural, Symbolic or seMantic content, with another four (20%) falling at the Below Average Level.

Given the severity and extent of the disabilities or learning deficiencies identified, it may be anticipated that changes and improvements in academic performance may well take considerable time and effort on the part of both the learner and the tutor(s) involved.

SECTION THREE

SUMMARY AND RECOMMENDATIONS

I. SUMMARY

Parkland Regional College undertook the developmental project, *Literacy for the Learning Disabled Adult*, for the purpose of providing appropriate intervention to learning disabled adults through individualized tutorial instruction.

The main objectives of the project were:

1. The development of a checklist appropriate for initial screening purposes;
2. The accurate assessment/diagnosis of specific learning disabilities in adult learners;
3. The development of individualized program plans for adults with learning disabilities based on the assessment;
4. The provision of specific training/intervention on a one-to-one basis through trained volunteers; and
5. The preparation of specialized instructional resources suitable for learning disabled adults.

II. MAJOR DEVELOPMENTS AND ACCOMPLISHMENTS

The major developments and accomplishments of Phase I of the *Literacy for the Learning Disabled Adult* project are as follows:

1. Information sessions on learning disabilities and illiteracy have served to develop an increased awareness level within the region. To a limited extent, people are more sensitive to and understanding of the academic, emotional and occupational needs of adults with learning disabilities, and are more willing to refer or self-identify for intervention.

2. Twenty adults, which is double the number of project participants originally estimated, were referred to Parkland Regional College for identification of learning difficulties. Of these referrals, nineteen have been assessed as learning disabled.

3. An initial screening device has been developed to assist other professionals and paraprofessionals in the identification of potential learning disabilities.

4. The Structure of Intellect - Learning Abilities Test has been adopted for project use, and is currently being piloted for assessment and intervention purposes.

5. During Phase I, volunteer tutors were recruited to assist adults with severe learning difficulties on a one-to-one basis - a model which has been recommended by the Learning Disabilities Association of Canada.

6. The initial training requirements of volunteer tutors, who are working with learning disabled adults, have been identified. Provisions for specialized training, which enabled the tutor to more adequately meet the needs of learning disabled adults, have been made.

7. Support services required by adults with learning disabilities have been identified.

8. Specialized materials suitable for adults with learning disabilities have been developed. These materials include:
   a) Instructional Strategies for Adults with Learning Disabilities - Tutor's Handbook
   b) Tutor's Guide to the Structure of Intellect.

9. Both formal and informal measures of evaluation will be completed upon one year of intervention.

III. RECOMMENDATIONS

1. That the *Literacy for the Learning Disabled Adult* project be extended for an additional year in order that developmental work initiated during Phase I can be completed. Due to the nature and severity of disabilities identified, this extended period of intervention is essential before the significance of remediation, on a tutorial basis, can be evaluated.

2. That the issues of learning disabilities and illiteracy continue to be addressed through information sessions and other related events.

3. That ongoing opportunities for academic instruction specific to the needs of learning disabled adults be provided within the region.

4. That an intermediate level of assessment, a device somewhere between the initial screening checklist and a full-scale psycho-educational assessment, be identified or developed.

5. That as the tutoring process continues, the additional training needs of volunteer tutors be identified and appropriate provisions made.

6. That the necessary support services required by learning disabled adults involved in the project be implemented.

7. That resources purchased during Phase I continue to be utilized by volunteer tutors and learners involved in the project before a final evaluative summary, and subsequent resource recommendations, are made.

8. That the specialized materials developed during Phase I proceed through an implementation period whereby:
   a) tutors are trained in the appropriate use of these materials;
   b) tutors working with learning disabled adults utilize these resources; and
   c) materials are modified, or further developed, as required.

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APPENDIX A

NEWSPAPER AND JOURNAL ARTICLES

CAN WE ALL LEARN TO READ AND WRITE

There is much speculation, but little consensus, as to the extent to which learning disabilities contribute to illiteracy. Some estimates suggest that learning disabilities are a contributing factor in as many as 80 per cent of those with limited reading and writing skills. Learning disorders affect about 10 to 15 per cent of the general population, including those who are illiterate.

Professionals are still debating the nature of these disorders. Diagnosis and intervention were only begun in Canadian schools in the mid-1960's. Still a relatively new field of study among professionals, there are many questions about learning disabilities that have not been answered.

The Learning Disabilities Association of Canada (LDAC), defines learning disabilities as a "generic term that refers to a heterogeneous group of disorders due to identifiable or inferred central nervous system dysfunction. Such disorders may be manifested by delays in early development and/or difficulties in any of the following areas: attention, memory, reasoning, coordination, communication, reading, spelling, calculation, social competence and emotional maturation."

Specialists refer to the discrepancy between *potential* and *performance* as one of the hallmarks of the learning disabled person, who is usually of average or above-average intelligence. When a learning disability goes undetected, the person is unlikely to reach his/her potential, setting the stage for a lifetime of failure, frustration and low self-esteem. Social and emotional problems represent another unfortunately common characteristic of the learning disabled.

Despite increased attention within our educational system, many learning disabilities still go undetected. In addition, the LDAC has observed that youngsters with learning disabilities most likely to receive help are those "whose parents have the economic and cognitive resources to advocate on their behalf."

Adult literacy programs, for the most part, do not take into consideration the possible relationship between learning disorders and illiteracy. As Vesper Adams (then Provincial Vice-President of the Learning Disabilities Association of Saskatchewan) said in 1988:

> "In most literacy programs, the assumption is made that anyone can read if given an opportunity to learn. Tutors are often untrained in the art of teaching, and are given minimum training.... This creates problems for people with learning disabilities. The first is that because of their unique learning styles and problems, adults with learning disabilities usually require a teaching approach suited to their unique needs, and do not learn well in a group situation. The second is that such students often carry with them negative emotional baggage resulting from years of frustrated attempts to learn in the regular school system."

Very little is known about the most appropriate ways to provide literacy training for adults with learning disabilities. A study on Literacy and Learning Disabilities, prepared in June, 1989 for LDAC, concluded that in spite of the fact that very little research had been done, most learning disability experts agreed that, in general, literacy programs were "ill-equipped to effectively teach this population group."

At the Parkland Regional College in Yorkton, Saskatchewan a program development project, coordinated by Debbie Purton, hopes to address these needs by developing appropriate literacy programming for adults with learning disabilities.

"With the help of professionally trained psychologists, we assessed 10 adults, who were found to have a wide variety of severe learning disabilities," reports Purton. "Only one of the ten had had their difficulties diagnosed before. Most felt an enormous sense of relief at finally knowing what their problem was. Some had even tried literacy training before and failed."

"They knew they were capable of some things," Purton explains, "but they just couldn't for the life of them, figure out why they were unable to perform other tasks."

The program, which is about to enter its second phase at Parkland Regional College, will "survey the teaching resources and support services available, and prepare a package of prescriptive teaching techniques and methods suitable for learning disabled adults," says Purton. It will not formally test the results of its program until next year. However, informal tests have shown that after some initial successes, there were noticeable changes in self-esteem among the participants.

In Purton's opinion, there must be a clear understanding of the learning disability "*before*

you try out various teaching techniques. If you'd been plagued by failure all your life, you're not likely to wait around until someone comes up with yet another technique to try on you; your patience is gone."

Purton and her colleagues have also found that it is very important for the student to understand the exact nature of his/her learning disability. "Once they stop and reflect on the strategies they use to approach tasks in other areas, they begin to see how to transfer these strategies," says Purton. "The learning disabled are usually unable to make this connection on their own; they have to be shown how to transfer knowledge."

Regional librarian Ray Lustey, at Parkland Regional Library, has worked closely with Purton on this project. "We've been building our literacy collection for many years and a provincial grant two years ago gave it a big boost; we now have quite an extensive collection." Purton says that the support the library has offered to both tutors and learners has been invaluable. She is hopeful that the prescriptive teaching methods they are developing will help others who are involved in literacy training to recognize learning disabled students and their particular learning disability.

Reprinted with permission from *Canadian Library Journal*, 47, *3*,1990 (pp. 162-163).

Local college initiates literacy pilot project

Learning disabled adults from Melville and area can participate in a new literacy program unique to Saskatchewan.

Parkland Regional College has initiated a one-year pilot project to develop a program which meets basic academic and social needs of learning disabled adults through individualized tutorial instruction.

The pilot project is the first in the Regional College system and may be the only one of its kind in Canada, says College literacy co-ordinator Debbie Purton.

Purton said the College will contact social and community agencies in communities throughout the College area to develop awareness of learning disabled adults and seek input into the pilot project.

Phase one of the project will identify the training requirements of volunteer tutors and assess the needs of learning disabled adults, while phase two involves the direct participation of 10 learning disabled adults, Purton said.

At least 10 percent of people have some form of learning disability. Such people may have problems spelling, reading or following directions, she said.

Purton said $40,000 has been granted by the National Literacy Secretariat of the Department of Secretary of State for the project.

Melville Advance

Local college begins unique program for learning disabled adults

The Parkland Regional College is developing a unique literacy project targeted specifically for learning disabled adults.

The college received word in mid-April that it has been granted federal funding to help develop and implement literacy training for local residents with special needs.

With very few predecessors in this area of programming, the regional college is breaking new ground, says project co-ordinator Debbie Purton.

"There has really been very little work done in this area, even on a national basis. We're certainly heading into new territory," she says.

"We see the project as staying within the framework of our existing literacy program, but focussing on learning disabled adults.

"These students need to be in an environment which is much more suited to their needs," she adds.

The regional college has a record 150 students enrolled in its regular literacy program. Each pupil is matched with a personal tutor.

Mrs. Purton says that about 10 percent of the population, and about 30-40 percent of students in the local literacy program could be considered learning disabled.

"The purpose of the project is to develop a program which meets the basic academic and social needs of learning disabled adults (through) individual tutorial instruction," she says.

The project began when the Saskatchewan Literacy Council issued a call for project proposals. Parkland Regional College's idea to address learning disabled adults was accepted by the council.

Through the department of the Secretary of State, a $40,000 grant was awarded to the college to help implement the new program on a one-year basis.

The money will help the college develop a program for learning disabled adults and to re-train some of the current volunteer tutors.

"Because many of these students have had negative experiences with education in the past, we want to provide a more positive environment," says Mrs. Purton.

With the wide variety of learning disabilities, "we don't think there's any way you can address those needs unless you work one to one."

Learning disability is a generic term referring to one of a group of related central nervous system dysfunctions.

These disorders can affect attention, memory, reasoning, social interaction, reading, spelling, or even emotional maturation.

Learning disabled people are not mentally retarded or even classified as slow learners, because they often excell in other areas. Thomas Edison, Walt Disney and Tom Cruise have all been considered to have learning disabilities.

"One thing about the learning disabled adult is that there are other related concerns. Within the context of the pilot project we'll try to address a variety of needs," says Mrs. Purton.

She says learning disabled people "have very often gone through the education system with little or no success."

Proper diagnosis is the important first step before a proper program can be developed, she adds.

"Often they need help with organizational skills and in setting reasonable goals."

Mrs. Purton says several students have come forward already expressing interest in the program.

"The college is going to have wait and see whether it gets additional funding next year to expand on what we're building now."

NEW PROGRAM...Parkland Regional College has received a federal grant to help develop and implement a special literacy program this year aimed at learning disabled adults. Debbie Purton, the project co-ordinator, says the program will be based on individual tutorial instruction. About 150 area residents are currently matched with tutors through the college's regular literacy program.

YORKTON THIS WEEK
May 10, 1989

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Literacy: Trying to spell it out for learning disabled

By Tracey M. Diehl
The Enterprise

The program isn't expected to start until next April and already adults are knocking on their door.

The Parkland Regional College has just received a $40,000 grant for a literacy pilot program aimed at adults with learning disabilities. Literacy Co-ordinator Debbie Purton had hoped to reach 10 adults through the project, and now she says it could be much more successful.

"The word is out about the program and learning disabled adults are coming forward," said Purton. "Two adults have been assessed already and a third will be tested very soon. I can see there's more need for the program than people are aware of."

This project matches learning disabled adults in a one-to-one tutorial with volunteers, helping them learn to read and write.

"We already have a literacy program in effect, but this one is different," said Purton. "This pilot project is geared specifically to learning disabled adults. Very little has been done in this area on a regional, provincial or national basis."

In order to qualify for the program, adults must first be screened and assessed to determine whether they have a learning disability.

"Most adults have never been tested," said Purton, "so we have to make the distinction between a lack of opportunity and proper education, and a true learning disability."

When this has been develped, Purton said a list of characteristics and "symptoms" of learning disabled adults will be distributed among the community and social agencies.

She hopes this will get information to the people, and maybe they'll decide to get help.

"Many learning disabled adults know they know things in their head, but they can't get it on paper and they don't know why," she said. "So they think they're slow, or dumb, and that isn't necessarily the case."

But a lack of academic skills is only one of the problems learning disabled adults may experience.

Purton says often they will have unrealistic goals, for example they may say they are going to be a nuerosurgeon, while they are functioning literally at a Grade 1 level.

"And many don't sense socially acceptable and unacceptable behaviour," said Purton. "They may laugh at inappropriate times, or speak very close to a person's face. All of this moves into a lack of job skills, and that's a tough one to deal with."

"We already have in place a volunteer program but we have to determine what extra needs will have to be met, so we can make provisions and additional training requirements."
- Purton

But Purton and the trained volunteers are doing just that.

"We already have in place a volunteer program but we have to determine what extra needs will have to be met, so we can make provisions and additional training requirements," she said.

When adults have been paired with a trained tutor, an individualized education plan is developed, a different and specific plan for each learning disabled adult.

"The plan is based on the assessment results," said Purton. "We find their specific areas of achievement and pinpoint their strengths and weaknesses. And then we have to find out what their grade level is in every subject."

Developing each education plan involves hours of work, but Purton said it is well worth it if an adult can overcome their disability and learn to read and write.

Purton said a number of support services are also in the planning.

"We also want to create a group so they can acquire social skills and see others in the same situation," she said. "This way they'll be able to support each other in the battle."

All the details of the support services have not been worked out. Purton says the direction will adapt according to need.

"There's a tremendous amount of work and planning involved," she said. "It's definitely going to be a challenge."

Today's Enterprising Woman

Enterprise Photos

Debbie Purton has her share of work cut out for her. Purton is the Literacy Co-ordinator for the Parkland Regional College. She is in charge of a new literacy program specially designed for adults with learning disabilities. This program is in addition to the literacy program already in place, and Purton hopes adults will come forward and take a step toward literacy. Gregg Hodgson is one of 150 volunteer tutors for the literacy program in the Parkland area. At left, Hodgson and an adult learner work together in an effort to read and write.

LEARNING DISABLED...Consultant Elisabeth Stewart, right, and Debbie Purton, of Parkland Community College, talk about learning disabilities during a meeting held at the college Friday.

Learning disabled possibly brilliant

by Dave Ramsay

Albert Einstein, Leonardo da Vinci, and Thomas Edison all share a couple of common traits.

The first is that each is regarded as being among the most brilliant men ever to have lived. But they also share a second common characteristic—they all were considered to be learning disabled.

In fact, says Elisabeth Stewart, a specialist in the field of learning disabilities, as a child, Edison was considered so retarded that schools said he couldn't be taught.

Ms Stewart, who spoke at a meeting at Parkland Community College in Yorkton Friday, says the term learning disabled is an unfortunate one since those with it have average to above average intelligence.

And that is quite different from the perception of someone who has trouble reading—often a common form of learning disability.

"It's not a form of mental retardation, in fact it goes the other way. They tend to be above average in intelligence."

Ms Stewart, in describing the affliction, points out that it is also not a case of laziness.

"It's not a lack of effort or motivation," she says. "They try much harder than any of the rest of us. They try so hard but they just cannot manage to get it done."

While she says it is difficult to describe a typical learning disabled person, the common factor is that they have difficulty taking in and processing information. That can range from reading problems to difficulties in organizing one's life.

It can also crop in social behaviour. As an example, Ms Stewart says 35 per cent of young offenders are diagnosed as being learning disabled and a high percentage of prison inmates have the disorder.

It is also an invisible disability. Unlike a person in a wheelchair, it is difficult to see. And the problem may go on for years without being discovered.

"It's not easy at all to pick out," she says. "They look just like everyone else."

HEALTH

Nor is the cause known, although research is being done into links with high levels of lead, heredity, and nutrition.

Whatever the cause, it is a lifelong condition and for those with a disability, it can be an extremely frustrating experience, causing many people to have a low self-image.

"They may be very, very guarded, or defensive," she says, explaining some learning disabled people develop elaborate and sophisticated methods to hide their shortcomings.

A well-known form of learning disability is dyslexia—an inability to read properly in which letters are often seen in the wrong order. Because society places so much importance on reading, those who can't read are often looked down upon.

"We equate reading with intelligence," Ms Stewart says, but "a person who can't read is not a stupid person, he is a person who can't read."

There are also many other types of the disorder and learning disabilities affect about 10 to 15 per cent of the population.

The child who is thought of as a "klutz" may also having a learning disability. In this case the problem would be a motor skills deficiency. Another might occur with a student who can never get his school work completed in time. That would be considered an organizational problem, stemming from a difficulty to think in an orderly, logical manner.

While the condition will always remain, there are ways in which the symptons can be alleviated. A common method is to look at a person's strengths and develop them, she says.

In an adult, she adds, it is not a disability if it is not causing a problem.

Ms Stewart spoke at an information meeting at the college. She is working as a consultant on a pilot project on learning disabilities being undertaken by the college.

Funding for the year-long project comes from the secretary of state. Among its goals are to identify adults with learning disabilities, help them with their academic and social needs, and provide them with on-going support.

YORKTON THIS WEEK
November 15, 1989

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APPENDIX B

PROGRAM BROCHURE

If you suspect that you, or someone you know, has a learning disability, contact the Literacy Co-ordinator (783-6566) and encourage them to do the same.

Other Resources

Learning Disabilities Association of Saskatchewan (LDAS) 652-4114

- ☐ A voluntary, non-profit organization working to promote understanding of and improve services for the learning disabled.
- ☐ Offers parents, professionals and learning disabled adults information and support.
- ☐ LDAS and its chapters hold regular public meetings, provide information on resources in the area, and work with local school boards.

Chapters

Estevan
Moose Jaw
Regina
Saskatoon
Prince Albert

Parkland Regional College
Literacy Program
306 Second Avenue North
Yorkton, Saskatchewan
S3N 1H2

783-6566

Parkland Regional College
Literacy Program

Information ...

Identification ...

Instruction

for

Learning Disabled Adults

Literacy Co-ordinator
Debbie Purton
783-6566

What Is A Learning Disability?

A learning disability is:

- ☐ A known or assumed neurological dysfunction which interferes with the processing of information.
- ☐ A disorder which affects the way in which an individual is able to take in, retain and/or express information.
- ☐ Predominantly a problem in reading, writing, spelling, mathematics, perception (visual/auditory), organization and/or co-ordination.
- ☐ An invisible handicap and is, therefore, all the more frustrating.

A learning disability is not:

- ☐ A form of mental retardation.
- ☐ A lack of effort or motivation.

Who Is Affected By Learning Disabilities?

The learning disabled are found among:

- ☐ An estimated 10 - 15% of our population.
- ☐ All socio-economic, cultural and ethnic groups.
- ☐ Persons with average to above average intelligence.

How Can I Recognize A Learning Disabled Adult?

Here are some indicators which may be of assistance to you in identifying potential learning disabled adults:

- ☐ You may identify an imbalance between student output and your perception of their effort and ability.
- ☐ There may be an obvious descrepancy between the student's spoken and written language.
- ☐ Reading may be slow, with initial comprehension difficulties.
- ☐ Learning disabled students may describe an ability to understand what they hear, but not what they read, or vice versa.
- ☐ They may have an inability to spell, not just common errors, but a very high frequency of approximations.
- ☐ Handwriting may appear extremely cramped with varying slant and with capital letters placed randomly throughout a word.
- ☐ Mathematics may be very difficult for some learning disabled students. Even basic operations may lack pattern and logic for them.
- ☐ Organizational problems may be obvious in their oral or written assignments, notes or daily routines.
- ☐ The syndrome of effort and failure may have set up a very negative self-concept as a learner. Any success if attributed to luck or the instructor.
- ☐ Some learning disabled adults may also have a problem in social perception. For example, hints about ending an interview may be completely unread.

Although these characteristics may be applicable to many students, they are more pronounced in the learning disabled.

Source: Mount Royal College - Dr. Alana Gowdy.

Learning Disabilities Program

What is it?

One-to-one assistance with literacy, numeracy, and socialization skills.

Program Objectives?

Improve reading, writing and numeracy skills while focussing on the goals of individual participants.

Raise self-esteem and confidence through social opportunities built into the program.

Who participates?

Adults with severe learning difficulties.

Why is it needed?

To provide a positive learning opportunity for adults who have experienced only limited success in the past.

To develop teaching and learning strategies useful for participants.

How is this done?

Literacy Program staff meet with tutor-learner pairs to train volunteer tutors, assess learner needs, develop individualized educational plans, monitor pairs and model appropriate learning strategies.

Volunteer tutors meet weekly with adult learners to motivate, support, model, teach and advocate.

When?

The program operates on a continuous intake basis. Potential learners can be referred at any time.

Fee?

No charge.

APPENDIX C

SCREENING CHECKLIST

LEARNING DISABILITY SCREENING CHECKLIST

	Not at All	Occasionally	Frequently
LANGUAGE			
1. Difficulty in following (or tracking) conversations, lectures	_____	_____	_____
2. May respond inappropriately or ramble off the topic	_____	_____	_____
3. Problems relating ideas or dealing with abstracts	_____	_____	_____
4. Difficulty in pronouncing multi-syllabic words	_____	_____	_____
5. Difficulty coming up with correct word--may substitute with a similar sounding word	_____	_____	_____
LITERACY			
1. Poor or bizarre spelling	_____	_____	_____
2. Letters out of sequence	_____	_____	_____
3. Difficulty remembering/applying common spelling rules	_____	_____	_____
4. Spelling attempts strictly phonetic	_____	_____	_____
5. Writing sloppy, with uneven letters and/or spacing	_____	_____	_____
6. Letter and/or word reversals occur	_____	_____	_____
7. Unusual/Poor sentence structure	_____	_____	_____
8. Poor punctuation	_____	_____	_____
9. Tendency to mix writing and printing	_____	_____	_____

	Not at All	Occasionally	Frequently
10. Difficulties with basic arithmetic/ math facts			
11. Problems choosing correct math process in specific applications			
12. Difficulty working with fractions, decimals, percent			
13. Loses place on page while reading			
14. May skip words or lines while reading			
15. Substitutes words (particularly small common words)			
16. Uncomfortable reading orally			
17. Difficulties with vocabulary			
18. Problems comprehending material read orally			
19. Problems comprehending material read silently			
20. Oral communication exceeds written work			

MEMORY AND ORGANIZATION

1. Difficulty fulfilling commitments due to poor organization and time management			
2. Difficulty retaining information read			

		Not at All	Occasionally	Frequently
3.	Difficulty retaining information presented orally	_____	_____	_____
4.	Difficulty setting priorities and following through	_____	_____	_____
5.	Difficulty remembering names and/or faces	_____	_____	_____
6.	Difficulty remembering numbers (addresses and/or telephone numbers)	_____	_____	_____
7.	Difficulty remembering items in correct order	_____	_____	_____

SOCIAL

1.	Difficulty taking turns in conversation	_____	_____	_____
2.	Difficulty visualizing the other person's perspective	_____	_____	_____
3.	Problems maintaining appropriate physical and/or emotional distance	_____	_____	_____
4.	Difficulty 'fitting in' in group situations, organizations	_____	_____	_____
5.	Short attention span	_____	_____	_____

ADDITIONAL COMMENTS:

_____

_____

_____

_____

APPENDIX D

ASSESSMENT REPORT

ASSESSMENT REPORT

(This assessment report was prepared for 1 of the 20 project participants.)

NAME: XXX **DATE:**

TESTS ADMINISTERED:

Wide Range Achievement Test - Revised (WRAT-R)
Structure of Intellect - Learning Abilities Test (SOI-LA)

ASSESSMENT:

XXX's general level of achievement in the areas of reading, spelling and arithmetic were assessed using the Wide Range Achievement Test - Revised. Subtest scores were as follows:

Reading:	8B	grade equivalent
Spelling:	6E	grade equivalent
Arithmetic:	9E	grade equivalent

The Structure of Intellect - Learning Abilities Test was also administered:
a) to provide a general index of cognitive functioning; and
b) to assess specific learning strengths and weaknesses.

On the twenty-six SOI-LA subtests administered, XXX exhibited a very broad range of scores. The majority of scores (10 subtests) are in the expected range, but nine subtest scores fell within the above average to gifted range. Seven of the subtest scores, however, were in the disabling to low average range. This wide scatter is indicative of a specific learning disability.

LEARNING STRENGTHS:

Analysis of specific subtests indicate the following areas of strengths:

a) XXX's symbolic abilities are superior. This means that XXX has good ability to work with notational content -- we would expect him to be a good phonetic reader and speller, and to perform well in arithmetic.

b) XXX's general comprehension abilities are in the expected range. He has the ability to "track" and integrate new information as it is being processed.

c) XXX's short-term memory abilities are, generally, in the expected range. He should be able to recall information once he has comprehended it.

d) XXX's problem-solving abilities are in the expected range. He should be having little or no difficulty in handling problem-solving curriculum or analytic reasoning tasks.

e) XXX has very well developed planning and reasoning abilities; these abilities should translate into good practical judgment.

f) XXX is superior in both arithmetic and math-related abilities; these should serve him well in geometry, algebra, and other secondary math curriculum.

LEARNING WEAKNESSES:

Specific areas of weakness identified are as follows:

a) The fact that XXX's semantic abilities are lower than his symbolic abilities may be a source of difficulty to him since school emphasizes semantic more than symbolic content. With strong study skills XXX can compensate. His

symbolic gifts should be recognized and nurtured, but at the same time instructional strategies should be taught to further develop semantic abilities.

b) A number of the SOI-LA subtests are good indicators of certain vision functions that are required for near-point school work. While the SOI-LA subtests are not optometric tests, they can predict whether a person is potentially at risk in prolonged learning tasks due to vision dysfunction or visual stress.

XXX experienced difficulty with several vision-related subtests. It is therefore, recommended that XXX undergo a complete developmental vision examination to determine if vision therapy is required.

c) XXX's visual sequencing capabilities are at the disabling range. XXX is unable to "hold" and process, or sequence data. This area of disability relates directly to XXX's poor spelling abilities. Specific memory training in the area of visual sequencing is required immediately to address this area of difficulty.

d) XXX's creativity is at the limiting range. Due to this area of weakness, XXX is likely to be inhibited in tasks without explicit instructions. Low creativity also results in slow and/or pedantic writing and composition skills. This area must be addressed if XXX is to experience success in written assignments.

e) XXX's reading comprehension abilities are low. Thus, he is probably not having difficulties with the mechanics of reading, but rather with the concepts and sequencing abilities necessary for accomplished reading. One specific weakness in this area is XXX's inability to deal with extended verbal information. Consequences of this inability will be difficulty in "tracking" long or involved sentences and instructions.

f) XXX appears to be experiencing difficulty with psycho-motor coordination as evidenced in his general handwriting skills. It is recommended that the Bender-Gestalt be administered to determine if specific perceptual-motor difficulties exist.

RECOMMENDATIONS:

Skill Area: General

1. XXX learns most efficiently in a structured teaching situation. Understanding of smaller units must precede understanding of larger units.

2. Given that it takes a long time for XXX to process extended verbal information, wherever possible, time limits should be extended in order that XXX's instructors may obtain an accurate indication of his knowledge.

3. To extend XXX's comprehension of extended verbal information, the following SOI Training Modules are recommended:

   CMS - I

   CMR - II

Skill Area: Reading Comprehension

1. XXX must be taught how to utilize pre-reading activities to improve comprehension. XXX must learn to ask himself questions, such as the following, before engaging in any reading task:
   a. What is it that I am going to read about?
   b. What do I know about the topic?
   c. What is the main idea?
   d. What are the headings or first and last sentence of each section?
   e. Read questions (if there are any) first.

2. Assist XXX in "setting a purpose" for reading. Formulate questions before reading a passage, then have XXX read to answer specific questions.

3. XXX should be encouraged to place more value on the use of reason and logic in reading. He will benefit from double checking the logic of material which he reads or answers he gives by relating new information to prior knowledge. It is likely that XXX will need some individualized guidance in the application of these strategies.

4. Work with cloze exercises would encourage XXX to read for meaning versus decoding.

5. Use of reading comprehension strategies, such as K-W-L Strategy and Semantic Mapping, as pre-reading activities will also develop XXX's understanding of material read.

Skill Area: Spelling

1. XXX requires immediate visual memory training. The following SOI Training Modules are recommended:

   MFU - Memory of Figural Units
   MSS - II - Memory of Symbolic Systems - Module II
   MSS - III - Memory of Symbolic Systems - Module III

2. Use "word search" exercises to further develop XXX's visual memory abilities with systems of information.

3. Use a phonetic-based approach where rules are introduced first and then later applied. Possible resource materials:

   Spellbound (Rak, 1977)
   Spell of Words (Rak, 1979)

4. Teach prefixes, suffixes, and root words to extend spelling skills. Use of word formation tables reinforce common visual elements.

Skill Area: Writing

1. Provide strategies for pre-writing activities. For example, encourage XXX to:
    a) Ask, "What am I going to write about?
    b) Practice writing drafts on the computer so changes can easily be made.

2. To expand his ideas and formulate details on a topic for writing, XXX should be encouraged to use mind maps. This strategy would expand his ideas in a brainstorming fashion which can then be further developed.

3. Teach XXX outlining skills to organize thoughts generated through brainstorming/mind map activities.

APPENDIX E

RESOURCES

PROFESSIONAL REFERENCE

Alley, G. & Deshler, D. *Teaching the Learning Disabled Adolescent: Strategies and Methods*. Denver, Col.: Love Publishing Co., 1979.

Bingman, M.B. *Learning Differently: Meeting the Needs of Adults with Learning Disabilities*. Knoxville, TN: University of Tennessee, 1989.

Gearheart, B., DeRuiter, J. & Sileo, T. *Teaching Mildly and Moderately Handicapped Students*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1986.

Karassik, J. W. *Literacy and Learning Disabilities: A Handbook for Literacy Workers*. Ottawa: Learning Disabilities Association of Canada, 1989.

Learning Centre. *Reading Comprehension: A Reciprocal Teaching Strategy for Adults with Learning Disabilities*. (Video and Tutor's Handbook). Calgary: The Learning Centre, 1989.

Learning How To Learn: Teaching Strategies. Allen, TX: DLM Teaching Resources, 1983.

Learning Together: A Handbook for Teaching Adults with Learning Disabilities. Developed by Malaspina College for Ministry of Advanced Education and Job Training, British Columbia, 1987.

TUTOR TRAINING

VIDEOS:

Breaking the Unseen Barrier: Program 1 (We're Not Stupid) Calgary: ACCESS Network, 1988. (15:00)

Journeyworkers Video Program. Calgary: ACCESS Network, 1988. Workshop Leaders' Guide and Tutor's Handbook also available. Program titles include:

1. Learning and Teaching (34:00)
2. Learning from Experience (1:25:38)
3. Making Sense of Words (47:55)
4. Making Sense of Content (1:37:31)
5. I Just Want to Learn More (18:15)

Reading Comprehension. Calgary: The Learning Centre, 1989. (23:00) Tutor's Handbook also available.

SLIDES/AUDIOCASSETTES:

Special Reading Problems: Some Helps. Syracuse, NY: Literacy Volunteers of America, 1983. Notes for Tutors also available.

EDUCATIONAL RESOURCES

Heinemann Guided Readers - Beginner Level. Downsview, Ont.: Monarch Books. Audiocassettes also available. Popular titles include:

1. Rich Man - Poor Man by T.C. Jupp
2. Death of a Soldier by Philip Prowse
3. Marco by Mike Esplen
4. Money for a Motorbike by John Milne
5. Dangerous Journey by Alwyn Cox
6. Anna and the Fighter by Elizabeth Laird
7. The House on the Hill by Elizabeth Laird
8. The Long Tunnel by John Milne

Hurray, G. *A Spelling Dictionary for Beginning Writers*. Cambridge: Educators Publishing Service, Inc., 1987.

Mully, G. *Job Interview Tips for People with Learning Disabilities*. Ottawa: Learning Disabilities Association of Canada, 1990. Audiocassette also available. (60:00)

Murphy, C. *Challenger* series. Syracuse, NY: New Readers Press, 1985.

Rak, E. *Spellbound*. Cambridge: Educators Publishing Service, Inc., 1977.

Rak, E. *The Spell of Words*. Cambridge: Educators Publishing Service, Inc., 1979.

Thomas, V. & Braun, C. *Learning to Spell: A Self-Help Program*. Toronto: Gage Publishing Ltd., 1983.

Tilkin, S. & Conoway, J. *Horizons E* series. Tulsa, Oklahoma: Educational Progress Corp., 1980. Titles in the series include:

1. Recalling Details
2. Finding the Main Idea
3. Establishing Sequence
4. Following Directions
5. Distinguishing Between Fact and Opinion
6. Drawing Conclusions
7. Recognizing Cause and Effect
8. Predicting Outcomes
9. Recognizing Plot, Character, and Mood
10. Making Judgments

APPENDIX F

TUTOR'S GUIDE TO THE STRUCTURE OF INTELLECT

INTRODUCTION: LEARNING STYLE & READING STRATEGIES

When using the SOI method of assessment, 'learning style' refers to the type of content being presented. Three possible categories are assessed on the SOI tests: Figural, Symbolic and seMantic.

Figural content is perceived/recalled in the form of images shapes, simple sounds, gestalts, and concrete 'things'. Artists, sculptors, mechanics, and designers work well with figural content. These abilities also have a strong sensory nature involving the processing of auditory, visual, kinesthetic information.

Symbolic content includes numbers, letters, notes of music, and any other symbols which are recognized as having representational meaning. Musicians and mathematicians would rate highly in their ability to deal with symbolic content.

The third category, seMantic content, refers to dealing with words and ideas where abstract concepts are involved. Writers, actors and teachers would likely be high in ability with seMantic content.

FIGURAL LEARNERS

This person works best with shapes. Objects and spati relations. They work well with figures, and can manipulate them easily either mentally or manually. These learners tend to score high on the Figural subtests, poorly on the seMantic subtests, are generally low on the symbolic subtests.

Recommended reading strategies should emphasize their Figural abilities. Begin with a gestalt method, using memory and pictorial representations of words and sentences. Flash cards might be appropriate (colour coded for the different

parts of speech. Learners should be encouraged to trace new words in order to involve the kinesthetic modality.

SYMBOLIC LEARNERS

This person works most comfortably with numbers, letters, musical notes - any form of symbolic content. Their profile will tend to show higher scores on the Symbolic as opposed to the seMantic subtests. They tend to have excellent auditory memory skills, and are non-conceptual learners.

Research indicates that these learners learn to read most easily when auditory methods are used. In addition, any notational system such as phonics, basal readers etc. would be appropriate.

SEMANTIC LEARNERS

This person works best with words and ideas. They tend to be conceptual, gestalt learners, with excellent visual skills. Their profile will show them scoring high on the seMantic subtests plus many of the Figural subtests. There is no particular pattern of weakness associated with this type of learner.

The most appropriate reading methods for this learner would emphasize their visual skills and conceptual abilities. Language experience, whole language, sight words etc. would all be appropriate. A learner who is seMantic in preference will lose confidence if required to sound out words; they should be 'given' these additions to their vocabulary.

FIGURAL	SYMBOLIC	SEMANTIC
		Fish

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SOI-LA ABILITIES AND DISABILITIES ASSOCIATED WITH THREE LEARNING STYLES

Learning Style	Abilities (High Scores)	Disabilities (Low Scores)
FIGURAL	CFU	CFC
	MFU	CMU
	MSU-V	CMR
	EFU	CMS
	CFS	Systems
	CFT	
SYMBOLIC	EFU	CMU
	MSI	CMR
	NST	CMS
	CSS	
	ESS	
	NSS	
	MSU-A	
	MSS-A	
	NSI	
SEMANTIC	CMU	
	CMR	Any other
	CMS	subtest
	NST	may be
	CFU	high or
	CFC	low
	EFU	
	EFC	
	MSS-V	

Low seMantics

Ability Profile

This learner will have difficulty working successfully with words and ideas. Their skills may be more non-conceptual and auditory in nature. Specific SOI subtests to consider are:

CMU - vocabulary
CMR - verbal relations
CMS - verbal systems
DMU - creativity/fluency with words and ideas
NST - speed of word recognition

If all are low, then the learner will have problems with reading, with words, and with communication skills. They may be either Figural or Symbolic learners.

***NOTE:** Emotional stress may also interfere with comprehension of seMantic content. Subtests which might be affected by emotional stress include ESC, CMU, CMR and NSI - the communication skills.

Specific Behavioral/Academic Difficulties

- may not be 'seeing' complete word (beginnings, middles, endings)
- may read some words backwards: was - saw
- may have difficulty forming concepts, therefore reading comprehension may be low
- may have problems classifying and conceptualizing

- may tend to guess at word meanings
- may have difficulty with math 'word' problems
- may have poor reading comprehension of relationships of ideas; poor at analogies
- may have difficulty 'tracking' long or involved sentences
- may often misunderstand instructions
- may appear/be inattentive during lectures
- may have poor comprehension with complex reading materials
- may ask repeatedly for instructions
- may lose place on page or line while reading
- may skip lines or words while reading
- may be able to read well upside down or backward, but not well otherwise

OVERALL TUTORING SUGGESTIONS

1. Explain task instructions, and provide appropriate time guidelines.

2. Ask for feedback from the learner to ensure understanding of the task.

3. Present one task at a time, and remind learner to think about the task.

4. Show and teach how to organize different tasks; present different ways of classifying and conceptualizing information.

5. Keep instructions short, and use appropriate vocabulary.

6. Be sure to take lots of time to explain new concepts.

7. Present new ideas in many different ways; teach and encourage paraphrasing skills.

8. Repeat and reteach difficult points and concepts.

9. Use visual and figural cues where possible.

10. REMEMBER: PATIENCE WITH THIS LEARNER.

Questioning Strategies to Teach

CMU - What do these words mean?

CMC - Which of these ideas/words go together?

CMR - Why is this word like this word?
How are their meanings related?

CMS - Put these words/ideas in the correct order to form a sentence/paragraph.

CMT - Think of a word that means the same as this one.

CMI - What does this sentence/paragraph imply?
Can you read between the lines?

CFU - What is it?
Describe it to me.

CFC - Which sounds/shapes/pictures are alike?
Which ones can be put together?

DMU - Say or write as many words as you can that begin with the letter 'a' in one minute. (Vary the beginning letter; use letter endings, etc.)

In addition to the specific training modules available for each of the SOI abilities, the following exercises from both the basic and advanced sourcebooks would be both helpful and appropriate:

BASIC SOURCEBOOK:
CFU V-12 plus similar exercises
CFC 4 A, B, C, D; 7; K-8
CMU 10 A, B, C; 12A; plus commercial
CMR 6, 7, 8

ADVANCED SOURCEBOOK:
CFC 2
CMU entire section, plus commercial
CMC complete section of exercises
CMR 5A; 8A, B

Low Memory & Systems

Ability Profile

This is the profile most often associated with dyslexia and its specific forms. there are two major difficulties to be addressed: Memory and dealing with systems of information. Low scores will likely include the sequential memory tasks - MSSa (auditory: affects both arithmetic and sentence usage) and MSSv (visual: affects spelling). These are crucial learning blocks for dealing with complex academic material.

Other weaknesses may include:

CSS -	basic rote arithmetic facts
ESS -	selection of correct numeric progressions
NSS -	application of numerical facts
CMS -	comprehension of extended verbal information

***NOTE:** The tutor should check and complete the SOI Dysintegral Checklist for Dyslexia for this learner. it may be that this particular profile will require professional intervention and management.

Specific Behavioral/Academic Difficulties

- may have problems with spelling, particularly in the order of the specific letters
- may have problems recalling long words or sentences; cannot hold information in mind while 'processing' at the same time

- may have difficulty focusing and concentrating
- may have difficulty 'tracking' long or involved sentences; often misunderstands instructions, and asks frequently for them to be repeated
- may be inattentive during lectures, classroom situations
- may have increasing difficulty with reading comprehension as the material becomes more complex
- may evidence poor mastery of basic arithmetic facts, and have difficulty comprehending numerical progressions
- may experience difficulty applying numerical facts, and with arithmetic/math problem solving
- may have poor auditory sequencing capabilities, which make it difficult to hold material presented auditorially, in mind while processing

OVERALL TUTORING SUGGESTIONS

1. WITH THIS LEARNER, PROCEED VERY SLOWLY AND PATIENTLY. OVERLEARNING IS IMPORTANT. ENSURE THAT THEY HAVE INCORPORATED ONE STEP BEFORE PROCEEDING TO THE NEXT.

2. Begin IMMEDIATELY to work on improving the memory abilities. Provide practice time within the structured lessons; in addition, have the learner work on memory skills during the remainder of the week. (10 minutes/day; at least 3 days/week).

3. These learners respond best to structure and order. Arrange tutoring sessions so that they know what to expect, in what order, etc.

4. Be sure to vary both teaching approaches and materials. Where possible, teach to as many of the modalities as you can: visual, auditory, kinesthetic.

5. Stress how decisions are made, answers found, etc. and be sure to vocalize the steps for these learners.

Questioning Strategies to Teach

CSS - Construct a time line.
What number/letter comes next in the series?

ESS - In this sequence of numbers/letters, which one does not belong? Why?
Which one is _____ more or less?

NSS - See if you can figure out the code and read the message.

CMS - Take these words/sentences and put them in the correct order to form a sentence/paragraph.

A-MSS - Try to say this number backwards.
Try to say these letters backwards.

V-MSS - Try to write this number backwards.
Try to write these letters backwards.

In addition to the specific training modules available for each of the targeted SOI abilities, the following exercises from both the basic and advanced sourcebooks would be helpful and appropriate:

MEMORY TRAINING: Use the individual modules, the sourcebook, and the memory handbooks. Determine the memory strengths of the learner and then work through these to assist and develop weaknesses. The following exercises are taken from the memory sourcebook:

MFU -	3A, 4V&A, 6-8A&B(put on index cards), 11
MFS -	5V-A&B, 9A&B, 10A
MSU -	5-9 inclusive, plus work with cards
MSC -	3, 4, 5
A-MSS -	4, 5
V-MSS -	playing cards in series; words in series

Low Vision

If there are difficulties with learning due to physiological problems with vision, these difficulties must be addressed either previous to or concurrently with any specific intellectual training. The importance of adequate vision related to learning tasks and reading should not be underestimated; both visual acuity and the development of eye coordination and tracking skills are essential foundational reading skills.

The SOI-LA Test has a number of subtests which are highly visual in content; low scores on these should precipitate a referral to an eye specialist for specific visual examination. The examination would include assessment of the following visual skills/competencies:

1. Eye Movement Skills
   - Pursuit
   - Saccadic Fixation
   - Convergence

2. Eye Focusing Skills
   - Amplitude
   - Flexibility
   - Acuity
   - Snellen

3. Eye Teaming Skills
   - Binocular Alignment
   - Focus-Alignment
   - Fusion
   - Stereopsis/Suppression
   - Form Perception

Ability Profile

This learner will have difficulty with visual tasks, particularly if they are long in duration. They may experience eye stress/strain (redness, soreness, rubbing) and watching their performance of paper and pencil academic tasks may identify problems with tracking, coordination, and focusing.

Specific SOI subtests to consider are:

CFU - visual closure
CFT - visual perspective
MSU - visual attending
MSS - visual sequencing
EFU - visual discrimination

CMU - vocabulary recognition
NST - speed of word recognition

NFU - psycho-motor skills
DMU - spelling

Specific Behavioral/Academic Difficulties

- may not 'see' complete word from first to last
- may transpose or reverse letters and/or words
- may sometimes incline head when reading or writing
- may lose place on page, or be unable to track accurately when distracted from task

- may hold reading material very close to the eyes -- only seven or eight inches away, or very far away, indicating a tendency towards either over or under-convergence
- may move head back and forth while reading, as opposed to the eyes tracking the material
- may be subvocalization during reading: murmuring or silent moving of the lips
- may use a finger (or pencil) to trace lines
- may complain of blurring, double-vision or headaches
- may hold reading material to the left or right of centre, indicating one eye dominance
- may have difficulty recalling what was read, while material presented orally presents no problems
- may be generally well-coordinated, but has difficulty with games such as tennis, softball, etc.

OVERALL TUTORING SUGGESTIONS

1. This learner requires special understanding and more time to complete tasks.

2. Teach the learner to preplan tasks requiring a lot of visual work so that they learn to reduce eye strain and stress by scheduling short breaks, interspersing visual with other modal tasks, etc.

3. It is extremely important that this learner ensure they have adequate rest, and that they are not fatigued when they attempt highly visual work, such as reading.

4. They should be encouraged to become aware of, and monitor, their symptoms of eye strain/stress. In addition, it would be beneficial if they begin to develop appropriate ways of relieving at least some of the stress.

5. Reading aids, such as using a pencil etc. to mark their place, should be encouraged IF it is of value to the specific learner.

6. Working with jigsaw puzzles, mazes, etc. may be of benefit to the learner who experiences visual closure problems.

7. Using a highlighter (or felt pens of different colours) may be beneficial for the learner who 'misses' beginnings and/or endings of words.

Questioning Strategies to Teach

CFU - What is it?
Describe it to me.

CFT - Which one is just like this one, but <u>turned</u> in another direction?
Draw what this would look like if you turned it upside down/one quarter turn to the left, etc.

MSU - What card did I just show you? (playing cards)
What object did I remove from the tray?

MSS - Try to write (say) this number backwards.
Name the cards I just showed you in sequence.

EFU - Are these alike or different?
Find the one that is the same.

CMU - What do these words mean?

NST - Find these words... (word searches)
Find all the rectangular/square, etc. objects in this picture.

NFU - Draw this shape.
Trace this figure/picture, etc.

* * * * * *

In addition to the specific training modules available for each of the targeted SOI abilities, the following exercises from both the basic and advanced source books would be helpful and appropriate:

CFU - Basic Sourcebook: CFU-Visual 2, 11, 12
Please be sure to use age appropriate material for these tasks.
- Advanced Sourcebook: CFU-Visual 1 (change to map of Canada, then Europe, etc.), 2, 4, 5

EFU - Basic Sourcebook: EFU exercises should be searched for those that appear appropriate for the skill level of the learner.
- Advanced Sourcebook: EFU 1, 2, 3, 4, 5
In addition many commercial books are available which enable the learner to practice evaluative skills.

NST - Basic Sourcebook: NST 3, 4, 5

In addition, similar materials may be developed to further practice this SOI ability.

- Advanced Sourcebook: NST 1, 3, 4.